CLAIMS

1. An apparatus for reducing multipath distortion in a television signal, which comprises:

a plurality of antenna elements for receiving the television signal, wherein each of said plurality of antenna elements receives a respective one of a plurality of spatially unique signals, each of said plurality of spatially unique signals being a different replica of the television signal;

an adaptive combiner, coupled to said plurality of antenna elements, for generating a spatially combined signal; and

a receiver, coupled to said adaptive combiner, for demodulating said spatially combined signal.

2. The apparatus of claim 1 wherein said plurality of antenna elements comprises a loop antenna having a plurality of feed ports, each of said plurality of feed ports being disposed around the perimeter of said loop antenna so as to receive a respective one of said plurality of spatially unique signals.

3. The apparatus of claim 1 wherein said adaptive combiner comprises:

a plurality of tuning modules, each of said tuning modules having a tuner and a weight for selecting a respective one of said plurality of spatially unique signals and generating a weighted spatially unique signal;

a summer, coupled to said weight of each of said plurality of tuning modules, for combining each weighted spatially unique signal to generate said spatially combined signal;

a multipath processor, coupled to said summer, for generating a figure of merit; and

an adaptive controller, coupled to said multipath processor and said weight of each of said plurality of tuning modules, wherein said adaptive controller controls the value of each weight using an adaptive algorithm having said figure of merit as input.

4. The apparatus of claim 3 wherein said adaptive algorithm comprises a cross-correlation algorithm.

5. A method for reducing multipath distortion in a television signal, which comprises:

receiving a plurality of spatially unique signals, each of said spatially unique signals being a different replica of the television signal; 342

combining said plurality of spatially unique signals to generate a spatially combined signal; and

demodulating said spatially combined signal.

6. The method of claim 4 wherein said combining step comprises:

weighting each of said plurality of spatially unique signals using weights to generate a plurality of weighted spatially unique signals;

summing said plurality of weighted spatially unique signals to generate said spatially combined signal;

processing said spatially combined signal to derive a figure of merit; and

controlling the value of said weights via an adaptive algorithm having said figure of merit as input.

7. The method of claim 3 wherein said adaptive controller uses the figure of merit to select a single one of the said plurality of received signals according to its individual pattern characteristics with respect to favoring a desired signal versus multipath components..

8. The method of claim 3 wherein said adaptive controller uses a manual user selection, stored in a memory.

9. A loop antenna comprising:

a plurality of conductive strips arranged in a circular pattern, where each strip comprises at least one narrowed portion;

a feed point comprising a gap defined by said at least one narrow portions of each strip;

a signal coupler proximate said feed point for coupling signals from said plurality of conductive strips.

10. The loop antenna of claim 9 wherein said signal coupler comprises:

a coaxial cable having a shield coupled to a first conductive strip and a center conductor spanning the gap and coupled to a dummy coaxial cable formed on a second conductive strip.

11. The loop antenna of claim 9 wherein said signal coupler comprises:

a impedance matching transformer.

12. The loop antenna of claim 9 wherein said plurality of conductive strips are formed upon a circular substrate.

13. The loop antenna of claim 9 wherein each of said conductive strips in said plurality of conductive strips forms a Vivaldi antenna element.